Epidemiology of Shigellosis in San Francisco during the HIV Era

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Objective: The impact of HIV infection on the epidemiology of shigellosis and its potential role as a risk factor have not been well described. To better understand this relationship and to assess the role of gay sex, a recognized risk factor for Shigellosis, we conducted an investigation of cases of Shigellosis in San Francisco, a city with a high prevalence of both HIV infection and men engaging in gay sex.

Methods: As part of CDC's Emerging Infection Program, active surveillance for infections caused by *Shigella* species was conducted in SF during 1996. All available medical records were reviewed using a standardized data collection instrument and data previously collected by the SF Department of Public Health (DPH) during routine interviews of cases were obtained. The estimated prevalence of HIV infection and men engaging in gay sex was obtained from the SF DPH.

Results: A total of 228 culture-confirmed cases were identified, including 142 and 73 caused by S. sonnei and S. flexerni, respectively. The incidence rate in cases per 100,000 population was 31.5, compared with an active surveillance rate of 10.9 in neighboring Alameda County (AC) and a reported rate of 7.3 in the US. The incidence rate in the 25-44 year age group was 46.0 cases per 100,000 population, compared with 6.8 cases per 100,000 population in AC, and the rate in HIV-infected persons was 442 cases per 100,000 population. Adult cases (age > 17 years) comprised 80% (181/228) of the total, and had the following characteristics: male gender (75%), white race (70%), gay male (65%), HIV-infected (52%), and sexually active in the 10 days prior to interview (69%). Fifty-one percent (96/190) of infections occurred in gay, adult men. When compared to the non-gay and non-HIV infected population, the incidence rate ratios for the gay and non-HIV infected, the non-gay and HIV-infected, and the gay and HIV-infected populations were 4.8 (95% Confidence Interval (CI) 2.7-8.0),34.0 (95% CI 14.2 70.1), and 35.0 (95% CI 24.6-49.5), respectively.

Conclusions: These population-based data demonstrate high overall rates of Shigellosis and dramatically elevated rates in HIV-infected persons. The high prevalence of HIV infection and men engaging in gay sex are likely important determinants of the Shigellosis rates in SF. The relative contribution of behavioral factors as compared to compromised host immunity in HIV-infected individuals warrants future investigation.

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